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SCPPA Comments on December 2016 IRP/Renewables Workshop

SCPPA Comments on the December 13, 2016 Lead Commissioner Workshop on Renewable Energy and the Integrated Resource Plans (IRP) (Docket No. 16-OIR-04) attached.

Additional submitted attachment is included below.



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California Energy Commission
Dockets Office, MS-4
Re: Docket No. 16-OIR-04
1516 Ninth Street
Sacramento, California 95814-5512

RE: SCPPA Comments on the December 13, 2016 Lead Commissioner Workshop on Renewable Energy and the Integrated Resource Plans (IRP) (Docket No. 16-OIR-04)

The Southern California Public Power Authority (SCPPA) appreciates the opportunity to provide comments on the December 2016 IRP workshop principally related to public power utility efforts to meet California's 50% Renewables Portfolio Standard (RPS) target – and for the extended comment period deadline in recognition of the holidays.

SCPPA is a joint powers authority whose members include the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Los Angeles, Pasadena, Riverside, and Vernon, and the Imperial Irrigation District. Each Member owns and operates a publicly-owned electric utility (POU) governed by a board of local officials. Our Members collectively serve nearly five million people throughout Southern California. Half of the 16 POU's that meet the SB 350 (de Leon) "size threshold" – an annual electrical demand exceeding 700 GWh, as determined on a three-year average commencing January 1, 2013 – are SCPPA Members, which includes: the nation's largest municipal utility (the Los Angeles Department of Water and Power (LADWP)), the State's smallest incorporated city (Vernon) that is 99% industrial, the nation's largest irrigation district (the Imperial Irrigation District (IID)), and mid-size utilities that serve coastal (Anaheim) and inland (Burbank, Glendale, Pasadena, and Riverside) urban areas.

All SCPPA Members are on track towards meeting their near-term RPS compliance goals, and thus appreciate the Commission's efforts and willingness to better understand what opportunities and challenges lie ahead in meeting California's 50% by 2030 renewables target.

Public power is particularly proud of the critical and direct role it plays in local communities. Rates are designed and set locally, typically by citizen-controlled boards or City Councils in open public meetings where community members *directly* influence energy policies and priorities. Collectively, our eight largest Members host nearly 200 public meetings annually to deliberate and set policy and budget priorities. As a result, public power utilities typically offer lower prices than investor-owned utilities because their local governing authorities exercise exhaustive examination and oversight of electric operations and policies, do not pay dividends to stockholders, have lower administrative costs, and can finance projects with tax-exempt municipal bonds. It also means that public power utilities have particularly successful records in terms of power supply reliability, safety, and efficiency as they focus on core utility operation areas and typically own, operate, and maintain their own assets.

SCPPA offers the following summary comments on the four workshop questions in the order presented in the agenda, which supplement the oral comments provided at the workshop both by our Members (Burbank, IID, and LADWP) and the joint public power representatives (SCPPA, the Northern California Power Agency, and the California Municipal Utilities Association).

WHAT ARE THE MAJOR OBSTACLES POU_s FACE IN DEVELOPING AND INTEGRATING A 50% RPS GOAL BY 2030?

- One challenge we observe our Members facing is how to navigate potentially contradictory climate change-related policies.
 - At any given time there are *dozens* of separate but related regulatory proceedings running concurrently across state regulatory agencies, which are compounded by efforts underway to meet local directives, regional and federal reliability requirements, and rapidly-changing state laws with limited and increasingly constrained staffing resources.
 - SCPPA has recommended better and more effective coordination amongst state regulatory agencies to help align programmatic and policy implementation goals. This includes forming a dedicated task force to help ensure that California's ambitious climate change policies are being implemented in a complementary, collaborative, and cohesive manner.
 - We can see a role for CEC in helping provide utilities with more regulatory certainty towards meeting a 50% RPS:
 - Greater evaluation of interactions between the Cap-and-Trade and RPS programs, with the goal of aligning the two, as that interaction directly impacts overall costs for our utilities and their customers. This includes greater coordination among CEC, the Air Resources Board, and the California Independent System Operator on issues such as GHG accounting (including crediting for renewable exports); transportation electrification crediting under ARB's Cap-and-Trade Program pursuant to SB 350; how GHG emission accounting efforts may translate to a broader, regionally-integrated market (which has indeed proven to be an extremely contentious one amongst neighboring states in regionalization discussions); and more policymaker-level discussion on how the ARB's 2030 Target Scoping Plan can affect in-state renewables development, as it includes multiple references to protecting the state's natural and working lands (including offshore) from conversion to more intensified uses.
 - Better engagement with local planning processes where local ordinances could or would *discourage* development of in-state (mostly RPS "bucket one") renewable projects. Indeed, SCPPA had filed multiple comment letters and testified before the Los Angeles County Board of Supervisors during their consideration and ultimate adoption of a local renewable energy ordinance expressing concerns with the negative impacts it could have on renewable development towards public power utility efforts to meet climate change goals. This was after dozens of residents had offered hours of testimony in support of the proposed ordinance because they did not want to see large-scale solar projects (in particular) negatively impact their local communities.
 - Difficulty in building transmission lines that navigate federal lands, or run through local communities that could require undergrounding high voltage lines, that would make those projects uneconomical to construct towards efforts to address transmission constraints in the already-transmission congested Southwest.
- **Customer rate impacts.**
 - A number of POU_s are "fully resourced," with little to no load growth, and it will take time to exit long-term commitments with out-of-state coal plants – which are now frequently running at minimal capacity, yet we must still pay fixed costs under long-term contracts. Adding renewable energy resources that are not needed to meet utility loads puts significant upward pressure on rates.
 - Federal hydropower resources can have even more complicated considerations for public power utilities, since they both help solve the climate change challenge we face at affordable costs for our customers, but are not RPS-eligible under state law. For example, SCPPA Member cities were instrumental in the federal effort to authorize and fund the construction of the iconic Hoover Dam, which offers both flood protection and secondary hydropower resource benefits dating back to the 1930's that substantially influenced population growth throughout the desert Southwest. SCPPA has also been key in federal lobbying efforts to retain long-term rights to low cost Hoover Dam hydropower for our Members, which required an Act of Congress; most recently in the 2011 enactment of stand-alone federal legislation with the backing of a majority of California's congressional delegation that provides all SCPPA Members with *50-year* contracts to emissions free, low-cost federal hydropower that cannot be sold by "preference customers." Hoover Dam is the only SCPPA project in which all twelve of our Members are participants.
 - If new renewable projects become much more expensive in the future, then SB 350 (compounded by grid integration costs), could certainly increase the cost of doing business in California due to higher electricity rates. For example, at the end of the 2016 state legislative session, an unforeseen last-minute insertion of a biomass procurement mandate as part of a nearly \$1 billion spending package *requires* our largest members to procure far-away biomass energy – at premium prices – that they would not have otherwise sought in ongoing efforts to keep

rates as low as possible for their customers. Accessing nearby utility-scale solar projects, for example, would have been a *much* more cost-effective option in procuring renewables towards meeting the 50% by 2030 goal.

- **POUs fund projects with municipally-backed financing**, which creates special constraints and rules.
 - POUs can be exposed to stranded costs, which have a direct and adverse impact on electric rates.
 - The Private Use Limitation on tax exempt financed resources are imposed and enforced by the federal government. These constraints are limited to only 10% of the overall portfolio.
- **Challenges with meeting state and federal reliability requirements.**
 - SCPPA encourages further considerations of market “duck curve” issues, which can alter market prices and the timing of “peak” and “off-peak” load periods. There will be certain periods of over-generation when significant amounts of renewables are available, and periods when there is a tremendous short fall of fast-ramping dispatchable resources needed to meet load, operating reserves, and to maintain “system inertia.” In the near-term, natural gas resources will continue to play a critically important role in integrating these resources by filling that steep evening ramp-period.
 - There is also future uncertainty that there will be enough new renewable supply in the market for all load-serving entities to meet their 50% RPS goals – particularly if in-state land uses become increasingly constrained while utilities are concurrently required to meet RPS “bucket” requirements that increasingly *limits* the use of both “bucket 2” and “bucket 3” resources going forward.
- **Retail Load unpredictability:**
 - Recognize the potential for increasing penetration of distributed generation which would reduce loads; however there is a necessity for electrical vehicles charging infrastructure to meet other statewide goals, which would increase load. These factors can vary both hourly and seasonally, underpinning the need for maximum flexibility.
 - There are also long-term procurement issues with the RPS. Retail sales are flat or declining; there are times when some POUs are over-resourced, but still must procure additional long-term renewable resources in order to meet the new requirement that 65% of their RPS obligation be satisfied with renewable energy from contracts greater than 10 years in length under SB 350.
 - SB 350. This poses extraordinary issues – not only as a result of constraints referenced earlier, but because the Cap-and-Trade regulation strongly prohibits “resource leakage” to other states.
 - Most renewable long-term products require at least a 20-year commitment in order to comply with future RPS requirements under SB 350; an increasing number of these contracts would need to be executed within the next two to three years. This is long before other long-term contracts would otherwise expire.
- **The Federal Factor:** The Federal Government still has an important role to play in setting and changing laws, and implementing congressional and executive actions via the Environmental Protection Agency, the Department of Energy, the Federal Energy Regulatory Commission, and the federal land management agencies. Any of which can significantly impact SCPPA Members. SCPPA is *very* concerned that anticipated congressional efforts in the 115th Congress to undertake comprehensive tax reform would detrimentally impact municipal bonds, thereby significantly raising the cost for local governments to fund infrastructure projects, including – *but certainly not limited to* – renewables. SCPPA has been heavily engaged through our federal public power trade associations and the Municipal Bonds for America coalition to fight any effort that would raise costs for municipally-backed financing, and would encourage the State of California to aggressively engage in the effort as well. The “federal factor” also includes future decisions that may be promulgated by the United States Supreme Court that may become increasingly *conservative* in near-future years.

WHAT ROLE IS ENERGY STORAGE EXPECTED TO PLAY IN MEETING THE 50% RPS GOAL?

As indicated in our AB 2514 joint public power utilities comment letter to Commissioners, public power outlined the following primary areas of interest regarding attaining *cost-effective and feasible* energy storage technologies:

- 1) **Research, Development, and Demonstration & Pilot Programs:** Public power will continue, as it has for years, to invest in energy storage RD&D and pilot projects to better understand the wide range of energy storage technologies and their varying real-world applications.
- 2) **Renewable & Storage Procurement:** In procuring and/or integrating utility-scale and community-level renewable resources, POUs will consider the costs and benefits of including energy storage to provide energy services that would otherwise need to be secured to integrate intermittent renewable generation resources.

3) **Infrastructure Replacement & Modernization:** As existing resources are retired (such as the once-through cooling power plants) and upgrades are made to the grid (such as the installation of advanced meters, communication technology, and other Smart Grid infrastructure), POUs will evaluate proposed energy storage solutions in response to competitive solicitations for resources and/or services.

4) **Market Conditions:** Public power will factor in how major policy changes, such as California ISO regionalization, could either hamper or improve the competitiveness of energy storage technologies in future resource planning efforts.

These four interest areas are grounded in the underlying principle that utility resource procurement and planning must be comprehensive, and lead to cost-effective, reliable, and feasible results for our customers. Depending upon *utility-specific factors* (including customer base, service territory, and existing resource mix), the current and future opportunity for energy storage to provide grid and customer services varies greatly among California's utilities, as is indicated by the differences in SCPPA's own membership where some POUs are "fully resourced" through future years – which limits the opportunities for new resources, such as energy storage, to be procured – while other POUs have resource portfolios heavily reliant on hydropower and are therefore less reliant upon intermittent resources, particularly solar, to meet RPS obligations.

SCPPA Members that are required to comply with the SB 350 IRP requirement are evaluating the following matters when considering how best to integrate *cost effective and feasible* energy storage technologies under a 50% RPS goal, both as this promising industry continues to rapidly evolve and costs continue to decline:

- **Renewables Integration:** SCPPA Members must necessarily account for renewable integration requirements based upon their renewable portfolio mix as part of their respective balancing authority rules. We recognize that some renewable portfolios include a significant amount of baseload renewable resources (e.g., landfill gas, geothermal, and small hydro) that are stable and simpler to integrate without energy storage, while energy storage could be a good resource to enhance the value of intermittent solar and wind resources as costs continue to decline.
- **Market Considerations.** When considering long-term investments by our customers that may span decades, our Members must also assess variable market conditions in a rapidly changing energy market and grid. This includes considerations for any stranded assets and future costs (e.g., mitigating toxic chemicals or substances in line with other local, state, and federal regulations) both for traditional resources and battery-based energy storage technologies.
- **Peak Load Reduction:** SCPPA Members have also undertaken projects towards reducing peak loads for certain small- and large-scale customers.
- **Grid Reliability.** In the future, as the cost of energy storage systems drops, it would likely be a good resource to enhance grid reliability. This includes project additions for grid-scale storage designed to firm remote renewable resources; behind-the-meter scale storage designed to shift load; and substation-scale storage to provide ancillary service such as regulation through automatic generation control or spinning reserves. Energy storage systems can provide value in deferring the need for distribution system upgrades as well.
- **Infrastructure Replacement.** One of the main drivers of POU consideration of energy storage is the early retirement and/or repowering of coastal natural gas power plants pursuant to the State Water Resources Control Board once-through cooling (OTC) regulation. The OTC regulation impacts 19 power plants, including three power plants in the LADWP balancing authority area that represent over 2,100 MW of capacity. A number of SCPPA Members are also working to support a rising number of solar and electric vehicle charging station installations. As POUs look to replace aging power plants and accommodate the growth of distributed energy resources, energy storage is being considered as a potential solution to meet future needs.

SCPPA and our Members will continue to perform their due diligence in analyzing energy storage systems as these technologies continue to mature from the research and development realm into commercial production, and as the potential benefits of these systems begin to clearly outweigh the costs. SCPPA and our Members continually monitor developments and optionality for energy storage in transmission and distribution system planning, and consider energy storage when there is a match between system needs and available technology. For example, in May 2016, as a response to the limited operation of the Aliso Canyon natural gas storage facility, SCPPA issued a Request For Information for potential programs, measures, and/or technologies to help reduce peak electric demand; increase local distributed generation capacity; and/or improve energy efficiency for customers, during the 2016 summer and/or winter months. Eight of the 17 responses included an energy storage component; however, none of those responses provided a *cost-effective and/or feasible*

solution. Last year, SCPPA also partnered with NCPA on pursuing a project through a “rolling” RFP to provide RPS-eligible solar power to participating NCPA and SCPPA Members; the project includes the potential to install energy storage to complement the solar generation.

WHAT INFORMATION CAN THE ENERGY COMMISSION PROVIDE TO ASSIST POU_s AS THEY DEVELOP IRPs?

- **Input Assumptions**, including:
 - A projected carbon cost scenario through 2030, preferably with uncertainty estimates around annual carbon prices.
 - Projected CAISO renewable integration costs for different renewable technologies, preferably something that could be aligned with (or used as a proxy for) the various CAISO Flexible Resource Adequacy Criteria and Must Offer Obligation (FRAC-MOO) cost adders.
 - Clear assumptions concerning the annual emission factor for CAISO system power, if system power purchases are to be counted against an LSE’s “total resource portfolio carbon footprint.”
- **Other Information or Guidance**, including:
 - A set of default cost estimates and performance characteristics for various renewable technologies would be useful. However, it should not be mandatory for LSE’s to use these cost estimates or performance characteristics. These should just instead be available (as default assumptions), if the LSE does not have access to more specific technical data.
 - Information regarding different electric vehicle charging technologies and respective load profiles.
 - Calculations to account for GHG reduction from transportation electrification (e.g., for specific fossil fuel vehicle type, converting it into an EV equates to GHG reduction of ___ MT per year).

WHAT ROLE DOES DISTRIBUTED ENERGY GENERATION PLAY IN POU_s ACHIEVING THE 50% RPS GOAL?

Distributed energy resources have a small impact to the overall 50% RPS goal for our Members due mostly to economics, limited land availability, and how California’s law counts treats them under the RPS. Rooftop solar is by far the most prevalent distributed energy resource; however, our Members only get the reduced load impact from those resources. In addition to the presentations offered at the workshop by Burbank, IID, and LADWP, SCPPA provides the following aggregated summary of responses from our four remaining Members affected by the SB 350 IRP reporting requirement:

- **Anaheim:** APU has delivered renewable energy to its customers since 2004. Today, approximately 80% of APU’s renewable resource portfolio consists of long-term contracts (10 years or longer) with grandfathered or PCC1 resources. To the extent allowed under the RPS rules, APU also procures PCC2 & PCC3 resources to manage RPS compliance and help reduce customer costs. While APU is on track to meet the state’s 33% by 2020 target, internal analysis shows that APU has a long-term need for renewable energy. APU will build on our base of long-term renewable resources, which is currently 27%, with the addition of various power purchase agreements for the output of mostly California-based renewable resources, and will continue to participate in a joint solicitation process facilitated by SCPPA, selecting renewable resources that are most cost-effective while considering integration costs. As older RPS contracts expire, they will either be renewed or replaced in order to meet the new requirement that 65% of the RPS obligation be satisfied with renewable energy from contracts greater than 10 years in length. To maintain flexibility and manage portfolio risk, the remainder of APU’s resource portfolio will consist of cost-effective renewables with staggered contract terms from various renewable technologies. There has been great change in the electricity industry over the past several years, as such, it is important for utility resource portfolios to remain agile and able to respond to changes in laws, regulations, technologies, and electricity markets.
- **Glendale:** GWP is well underway to be at 33% RPS requirements by 2020 and is committed to comply with the 50% requirement by 2030. GWP is planning to repower its Grayson Power Plant with more efficient, advanced technology generation units. GWP has plans to install a generation facility at the City’s Scholl Landfill site to generate renewable power by converting landfill gas to energy using the latest Best Available Control Technology (BACT). These plants’ improved efficiency will be utilized to provide regulation for intermittent resources, and will enable GWP to support the acquisition of more renewable resource. GWP is continuously looking for opportunities to enhance its RPS portfolio through diversification of resource mix and optimization of RPS Portfolio Content Categories. GWP will be divesting from coal generation sources to diversified renewable options. GWP is expecting to expand local distributed energy

resources, including solar generation to approximately 40MW by 2030. GWP continues to implement conservation and energy efficiency programs.

- **Pasadena:** In accordance with Pasadena's approved IRP Update in 2015, the **current** approved City Council RPS goal is to obtain 40% of Pasadena's energy from renewable resources by 2020. This is significantly higher than the State requirement of 33%. PWP plans to achieve 50% RPS by 2030 by procuring a diverse mix of renewables at the lowest possible price through long and short terms contract. Additionally, Pasadena is currently in the planning stage to enter into a repowering contract with IPP to acquire access to a new (yet to be constructed) gas-fired repowering project. If Pasadena executed, it would be for a reduced quantity of energy than what we are currently contracted for today, but the original contract for IPP is effective through June 2027. Pasadena will also support local renewable energy resources by establishing a Feed-in Tariff and a Community Solar Pilot project.
- **Riverside:** Riverside has already contracted for enough additional energy from eligible renewable resources to ensure that we comfortably exceed all SB X1-2 and SB 350 RPS mandates at least through 2020, and more likely through 2024. Riverside currently expects to reach a 35% RPS in 2017 and a 42% RPS in 2020. RPU is currently monitoring its portfolio of new contracts to ensure that they successfully deliver energy at their expected production levels, and continues to actively search for new or existing renewable resources that can be used to increase Riverside's renewable energy percentages beyond 2020. Preference will be given to contracts that are commercially viable, enhance and diversify the RPU resource portfolio, mitigate future regulatory risks, reduce RPU's carbon footprint, and optimize RPU's renewable procurement content category requirements in the most cost effective manner possible. Projects are generally selected for RPU's renewable portfolio using a best-fit, least-cost procurement strategy. Since Riverside expects to receive excess PCC1 renewable energy from 2016 through 2023; RPU will either bank this excess energy as excess procurement for use in later compliance years, or monetize (re-sell) this extra energy to other California load serving entities for the benefit of RPU rate-payers. RPU expects to receive over 1,000,000 MWh of renewable energy in 2020, with approximately 66% of this energy originating from geothermal assets. With respect to meeting our longer term 50% RPS mandate, Riverside plans on replacing at least part of RPU's expiring IPP coal contract capacity (~136 MW) with one or more new renewable resources. The preference is to either (a) contract for some type of baseload renewable resource like geothermal or landfill gas, or (b) contract for additional intermittent renewable resources (such as wind or solar) in combination with sufficient energy storage assets that can mitigate the intermittent generation profiles. A detailed assessment of the advantages and disadvantages of these two strategies will be examined in our 2019 Integrated Resource Planning process.
- **Vernon:** Vernon Gas & Electric's IRP goal is to diversify and increase its existing renewable energy portfolio by acquiring eligible renewable resources (wind, solar, and biomass) to meet the City's RPS goal of 50% by 2030. VG&E will continue to pursue and implement cost effective energy efficiency and demand side management programs to fully comply with California law enacted by SB 350 standards and achieve demand reduction targets for the next 14-year period. Energy efficiency programs are not only crucial for meeting the City's customer load growth; they also represent a cost-effective strategy for reducing GHG emissions, since the cleanest kilowatt-hour any utility can produce is one that is never generated. VG&E will continue to support local distributed generation and allow its customers to install solar PV at their businesses. The total generating capacity of distributed solar in the City of Vernon is expected to grow quickly due to the combination of drastic drops in solar panel costs, availability of state and federal rebates, and solar-equipment-leasing opportunities.

Thank you for your consideration of these comments. We look forward to continuing discussions with Commission staff as we collectively work to ensure that implementation of California's ambitious RPS goal is as successful as possible. SCPPA welcomes opportunities for continued collaboration with the Commission to ensure that the Integrated Resources Guidelines ultimately put forth effectively and fairly meet the intent of SB 350.

Respectfully submitted,



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